About the Authors

Itzhak Bars is a professor of physics at the University of Southern California, Los Angeles. He received his Ph.D. from Yale University in 1971 and after postdoctoral research at the University of California at Berkeley he was appointed to the Faculty of Stanford University in 1973. He returned to Yale University in 1975 as a faculty member in the Physics Department, and after a decade he moved to the University of Southern California in 1984 to build a research group in high-energy physics. He served as the director of the Caltech-USC Center for Theoretical Physics during 1999–2003. His visiting appointments include Harvard University, the Institute for Advanced Study in Princeton, and CERN in Geneva, Switzerland.

Professor Bars is a leading expert in symmetries in physics, which he applies in much of his research on particle physics, field theory, string theory, and mathematical physics in over 200 papers. He is the author of a book on "*Quantum Mechanics*" and co-editor of the books "*Symmetry in Particle Physics*" and "*Strings'95, Future Perspectives in String Theory*." Some of his experimentally successful physics predictions include supersymmetry in large nuclei with even/odd numbers of nucleons, and the weak interaction contribution to the anomalous magnetic moment of the muon, in the context of the quantized standard model, that was confirmed after 30 years. His contributions to the mathematics of supersymmetry are extensively used in several branches of physics and mathematics.

His current interests include string field theory and two-time physics which he originated in 1998. In 2006 he established that all the physics we know today, as embodied in principle in the standard model of particles and forces, is better described by a 2-time field theory in 4-space and 2-time dimensions projected as a shadow on an emergent 3-space and 1-time dimensions. His honors include Fellow of the American Physical Society, the First Award in the Gravity Research Foundation essay contest (shared with Chris Pope), Outstanding Junior Investigator Award by the Department of Energy, and the A. P. Sloan Foundation Fellowship.

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